The sound of feedback: Instructor uses and student perceptions of SoundCloud audio technology

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Abstract: This study reports on student perceptions of the use of SoundCloud, a web-based, audio-recording application, for instructor-student feedback and peer-to-peer feedback. Results from a self-report survey distributed to students indicate positive reactions to SoundCloud feedback at the instructor and peer levels. Implications of these results are presented, including qualitative data based on students' explanations for their feedback preferences. This study responds to the importance of improving current educational practices in ways that promote active, learner-centered educational environments as well as the need to test the potential of new technologies.

Keywords: audio, sound, feedback, evaluation, peer review, self-report survey quantitative data

Background

Since the late 1950s, scholars in composition studies have been exploring the efficacy of audio techniques for providing feedback to students usually in the form of instructor-recorded comments (see Killoran (2013) for a recent meta-analysis of the audio feedback literature since the 1950s). Recent scholarship on instructor-recorded audio feedback suggests many benefits, including students more comprehensively implementing audio feedback in comparison to written feedback as well as perceiving feedback as more personalized and supportive. Audio feedback by instructors has also been noted as bridging a gap between the learner and the instructor, benefitting the disabled, being a time-saver for instructors, and resulting in more elaboration by instructors because responses are longer (Gould & Day, 2013; Ice et al., 2010; Lunt & Curran, 2010; Merry & Orsmond, 2008; Middleton & Nortcliffe, 2010; Munro & Hollingworth, 2014; Sommers, 2012; Sommers & Mellen, 2003).

Current scholarship also indicates that students and instructors have an overall positive attitude toward audio feedback. More specifically, a study by Merry and Orsmond (2008) designed to measure the effectiveness of instructor audio feedback found that students more easily implemented audio feedback than written feedback and that students were able to interact with the audio feedback in different ways (each time they listened to the audio and when the audio was compared to written). Merry and Orsmond (2008) conclude that "students perceive and implement audio file feedback in different and more meaningful ways than written feedback." Similar to Merry and Orsmond, Middleton and Nortcliff (2010) found that when students listened to their feedback more than once, they engaged the feedback multiple times by,

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for example, taking notes each time and deciphering and interpreting the feedback in potentially new ways. However, despite the scholarship praising instructor use of audio feedback, "even today, audio_recorded commentary continues to fly beneath the radar of most writing teachers" (Sommers, 2013, p. 22). Among feedback methods, audio recording is often overlooked by instructors.

In addition to audio feedback from instructors, current technology allows for audio feedback from peers. Reynolds and Russell (2008) assessed the effectiveness of students' audio comments for peer review and found that "on average, audio reviews had 4 more HOCs [higher order concerns] and about 2 more LOCs [lower order concerns]" as well as "almost 6 more specific comments per review, on average, than written peer reviews" (p. 34). Although the audio reviews resulted in higher quality feedback, the attitudinal survey results indicate that students prefer to give and also receive written reviews (Reynolds & Russell, 2008). However, Reynolds and Russell (2008) argue that regardless of student preferences for written feedback, "audio feedback is more beneficial" because students "addressed more higher-order writing issues...providing their classmates with more and better feedback" and that students "spend more time thinking about audio feedback" and having "to interpret the reviewers' comments and then decide how to respond" (p. 36).

Although audio feedback is not new to the classroom, the technologies and devices used to compose and share audio recordings have evolved tremendously and range widely, including programs like Adobe Acrobat Pro, Microsoft Word, and Audacity as well as devices such as the iPhone and iPod. This spectrum of newer technologies also includes faster, web-based applications with more flexibility. Feedback technologies have also moved beyond just audio recording to screencasting, which enables an instructor to provide a visual with the audio commentary. However, these technologies bring up issues of access and can sometimes be cumbersome or expensive; additionally, they also often require more bandwidth, which can further limit student access. In response to these potential barriers to access and usability, we were interested in adapting an accessible (in this case web-based), easy-to-use, and free digital media application for distributing audio feedback in the classroom. One such application is SoundCloud, a web-based, social platform that allows users to record and share their sounds and to store their data in the cloud while also providing the option to make files downloadable. SoundCloud also allows users to follow each other, comment on sound files at specific moments, and create groups. Aware of the affordances of SoundCloud, our study contributes to scholarship documenting the benefits of audio feedback by exploring instructor- and peer-level feedback processes in the composition classroom through the use of audio feedback recorded and exchanged on the SoundCloud platform. Whereas past research has addressed the efficacy of audio-recorded feedback for instructor feedback and peer review across a variety of technologies, our research addresses the opportunities afforded by one of the more recent audiofocused social media technologies available, SoundCloud. Overall, our study is motivated by a recognition of the critical nature of feedback methods, such as peer review and instructor comments, in the writing classroom; a desire to identify ways we might improve our current practices to promote an active, learner-centered educational environment; and a need to test the potential of a new technology for audio feedback.

Methodology

Description of Study

The goals of this research project were to examine the efficacy of instructor-student and peer-to-peer audio feedback in a variety of English course contexts. Students' perceptions of the usefulness of audio feedback have been measured. Our choice of SoundCloud was partially driven by the need to address technology-related issues in giving and receiving audio feedback. SoundCloud offers a free version of its service, and it is available across multiple platforms. All functions can be performed on its website with robust site-based support, but it is also available for smartphones and tablets and compatible with both iOS and Android devices. Because audio files are saved to the cloud and shared via a URL link, users need not worry about the challenges of submitting large files over digital dropboxes or email. In addition to addressing some of the issues mentioned, SoundCloud is a social media, affording opportunities to follow users and insert written comments within an audio clip.

Timeline and Course Descriptions

This project spanned two semesters (Fall Semester 2012 and Spring Semester 2013), several course contexts, two institutions, and both face-to-face and distance learning environments. The institutional settings include a southeastern, midsize research institution and a community college in the same area. One hybrid course, three distance courses, and 10 face-to-face courses form the context in which the research was conducted. Course descriptions are provided below along with a brief overview of each course's composition projects and how audio feedback was incorporated.

First-Year English Composition. Students at a four-year research institution drafted a series of written and visual compositions for a variety of audiences and discourse communities. Peer reviews required students to comment on one another's written and visual arguments; however, students could choose to either write their peer reviews or record and share them using SoundCloud. A <u>student-generated</u> peer review worksheet was used to facilitate their written or audio feedback.

College Composition II. This entirely asynchronous course, based at <u>a community</u> college, focused on argumentation. Students were required to respond to two classmates for peer review on two major projects, using SoundCloud for one of those responses and providing written feedback for the other. They were also required to respond back to a classmate that had left a SoundCloud review using the written comment feature in SoundCloud. Additionally, the instructor provided formative written comments throughout drafts of these two assignments followed by a SoundCloud clip that summarized the issues and possible solutions.

Second-year English Composition. Students at a four-year research institution composed fully documented, researched arguments and persuasive pieces. One instructor included a peer review component with each of the four essays assigned, and students had the option of recording their peer review in SoundCloud or writing their peer review. The other instructor required students to use SoundCloud to compose an audio comment in conjunction with the written portion of the peer review.

Introduction to Technical and Scientific Writing. As a second-year science and technical writing course at a four-year research institution, students composed informative and

persuasive reports for both professional and academic audiences. Each assignment required a peer review, and students were given the option of providing written feedback or audio feedback using SoundCloud.

Introduction to Literature. This course at a four-year research institution introduces the analysis of literary devices in short fiction, poetry, and drama. Major projects included a conventional literary analysis and a multimodal wiki page. Students used SoundCloud to record audio comments as a concluding component to a written peer review for the literary analysis. The instructor also used SoundCloud for formative and summative feedback as well as engaging in online, small group discussions.

Data Collection

A self-report survey on students' perceptions was distributed at the end of each semester. The 11-item survey included questions formatted according to a Likert-type scale as well as open-ended questions designed to measure students' perceptions of the usefulness of SoundCloud as a pedagogical tool. A total of 150 students (n=89 fall students; n=61 spring students) participated in the survey. This article reports the findings of the quantitative results of the survey as well as a sampling of the responses from the open-ended questions. We intend to analyze audio clips in future iterations of this study.

Instructor-to-Student Audio Feedback Findings

To help determine the pedagogical implications of SoundCloud, students' perceptions of their instructors' audio feedback were examined. Instructor techniques varied within the study, including summative and formative feedback as well as the integration of sentence-level written feedback. While higher-order concerns were summarized verbally and shared with students through a URL link to a SoundCloud recording, lower-order concerns were identified with written comments throughout their essays.

Results

Survey results from both the fall (*n*=89) and spring (*n*=61) semesters indicate little change in opinion regarding the helpfulness of receiving audio feedback through SoundCloud (see Figure 1). Roughly 36%-39% found instructor feedback through SoundCloud very helpful in both semesters, with a range of 31-39% finding it helpful and 6-18% finding it somewhat helpful. Overall, the numbers show a positive reaction to SoundCloud feedback from their instructors. None of the students indicated that their instructor's audio feedback was not helpful. The most significant change between semesters exists in the number of students who did not use SoundCloud to listen to their instructor's feedback. In the fall semester, 21.4% of respondents indicated they did not listen to their instructor's recordings; only 6.6% of respondents did not listen in the spring semester. While speculative, we believe this decrease may be due to the instructors' growing familiarity with SoundCloud and its pedagogical applications as the semesters progressed. As the instructors grew more comfortable using the program in the second semester, they provided more reminders regarding the feedback, discussed it more often in class, and underscored the importance of hearing feedback in addition to reading it.

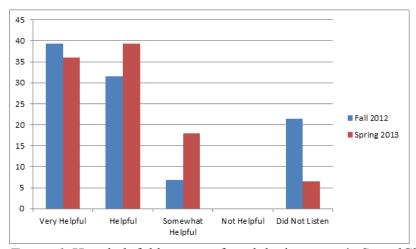


Figure 1. How helpful have you found the instructor's SoundCloud feedback?

To compare audio instructor feedback with written feedback, students were asked to state their preferences. Similar results were found across semesters (see Figure 2). Among the 89 who responded to this question in Fall Semester 2012 and the 57 who responded in Spring Semester 2013, more than 50% of students indicated a desire for a combination of written and audio feedback. This may be because those surveyed had grown accustomed to a combination: They consistently received both written and audio feedback on their final drafts from their instructors. From Fall Semester 2012 to Spring Semester 2013, a slight decrease in the number of students who preferred written feedback only (31%-21%) was observed as well as a slight increase in the number of students who preferred a combination (53%-56%). Because our study uses a Likert-type scale with a focus on student perceptions, it does not offer data explaining why students hold these opinions. Discovering why changes in preferences occurred and why students have these perceptions would require further study.

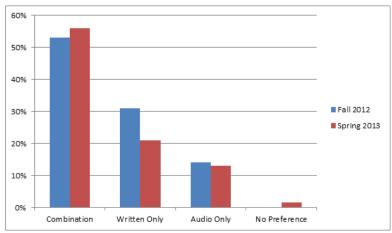


Figure 2. If given the option, which type of instructor feedback would you choose? For example, would you choose written, audio (recorded via an application like SoundCloud), or some combination of the two? Please explain your answer. Table 1

Sample of Students' Explanations for Their Preferred Instructor-Level Feedback

Preferred method	Sample student responses
Written	"Written just beacuse [sic] it is what I am use [sic] toBut the soundcloud also worked well."
	"Written because I would rather see my feedback next to where the problem is on my paper than to have to listen to an audio file where I could potentially miss something."
	"Written because it is faster for me to read it than it is to listen. Also I may toon [sic] out because it isn't interesting and I would always have to go back and listen to it over and over."
Audio	"Audio helped me the most because I could hear what my professor was talking about when it came to my paper, I understood her clearly, and it made my life easier when it came time to correcting work which was revised using soundcloud."
	"audio, because it is on a more personal level."
	"SoundCloud. It's nice to actually hear them explain."
Combination	"I would prefer written as well as audio feedback. Audio feedback allows me to here [<i>sic</i>] the sincerity in my instructor's voice."
	"Both. I like being able to hear what my instructor has to say about my work instead of reading it. This way, I can hear the tone of her voice!"
	"Combination of both, audio adds an aspect of being personal with the students while the written feedback is clear cut."

Discussion and Implications

The results regarding student perceptions of their instructors' use of SoundCloud were favorable. The majority found the application helpful when reviewing and understanding their teachers' comments. Open-ended responses indicate that audio feedback clarified their instructors' responses (see Table 1). Presumably, students may experience this clarity because it can take less time to talk through feedback than it can to write it out; as a result, instructors may be more verbose in their comments, leading to more explanation and clarification. Open-ended responses also indicate an increased feeling of personal connection with their instructors through audio feedback. As shown in Table 1, students viewed audio feedback as more "personal" and "[sincere]," and they value the information gained from the tone of voice.

However, it is important to note the preference toward a combination of written and audio feedback (see Figure 2). The instructors in this study provided a combination, relying on written comments to point out specific problem areas and highlight lower-order concerns. Open-

ended responses from students indicate a preference for written comments when it comes to locating these minor changes (see Table 1). While written comments may be more familiar to students and, therefore, more comfortable, the data suggest that audio feedback greatly enhances written feedback, providing clarity and a personal connection that can be lost in the written word.

Peer-to-Peer Audio Feedback Findings

While investigating the efficacy of audio feedback, one goal of the study was to explore the context of peer-to-peer feedback through peer review. In several courses, students were required to provide audio feedback in conjunction with the more traditional written peer review; however, some courses did not require students to use SoundCloud for peer review but, instead, made this component optional. The prompts <u>instructors designed for students</u> audio feedback <u>in peer review</u> also depended on individual course contexts and their corresponding learning objectives and assignments. See the following link to hear an example of a student's audio feedback: http://bit.ly/YA67eo.

Results

To measure students' perceptions of audio feedback for peer review, students were asked about 1) the usefulness of this type of feedback; 2) which form of peer-level feedback they prefer; and 3) why they prefer audio, written, or a combination of the two types of feedback. In the previous section on instructor-student feedback, combined data from all the courses have been provided because all three instructors incorporated instructor-level audio feedback at either or both the formative and summative levels. However, while all three instructors implemented peer-to-peer audio feedback on peer review assignments, in some courses, students were given the *option* to provide audio peer feedback, whereas in other courses this feedback method was a required component of peer editing. As such, combining data would skew the results; therefore, the data have been parsed based on participants in courses required to use audio feedback for peer review and those who were not required to do so.

Results for courses requiring audio feedback for peer review. During Fall Semester 2012 and Spring Semester 2013, roughly one third of the students (n=49) who participated in our study were enrolled in courses that required them to provide audio feedback for peer review. All but one of these students responded to the question measuring the "usefulness" of audio feedback for peer review. Fifty-nine percent (n=29) of the participants reported that this method of feedback was either very useful or useful for peer review. Twenty-five percent (n=12) reported that audio feedback for peer review was "somewhat helpful" while 14% (n=7) said it was not useful. Only one student reported not using it at all for peer review (see Figure 3). Forty-four out of 49 students responded to the question regarding their preference for which type of feedback they would prefer to give and receive. Twenty-two students reported a preference for written feedback while 14 students preferred a combination of written and audio feedback, and one student stated a preference for giving written feedback but receiving audio feedback.

Results for courses not requiring audio feedback for peer review. In our study, twice as many students (n=101) who participated in our survey were enrolled in courses that did not require them to provide audio feedback for peer review but, instead, made it an optional component of the assignment. All of the students (n=101) responded to the question regarding

how useful audio feedback is for peer review. Almost all students who participated in using audio peer-level feedback (46% or 46 total), by recording comments themselves and/or listening to comments recorded by their peers, reported that this method of feedback was very useful or useful while six students found audio feedback only somewhat useful. Notably, however, 48% (n=49) reported that they *did not* elect to engage audio feedback at all during the semester (see Figure 3). Eighty-eight students responded to the question regarding preference for peer-level feedback method. Although 43% (n=36) preferred to give and receive written peer-level feedback, a significant percentage of students indicated some preference for audio peer-level feedback, with 28% (n=23) preferring to give and receive *only* audio feedback for peer review and 29% (n=24) preferring a combination of audio and written peer-level feedback. One student from this data set also reported a preference for giving written feedback but receiving audio feedback at the peer level. Table 2 provides a sample of students' explanations regarding why they prefer a certain type of feedback for peer review.

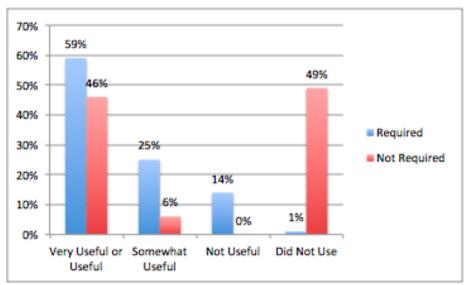


Figure 3. Comparison of students' perceptions of usefulness of audio feedback for peer review based on courses requiring and not requiring this method.

Discussion and Implications

The results of the quantitative data indicate that students perceive audio feedback at the peer level to be useful. The combined semesterly results of students required to provide audio commentary for peer review reported more positive responses regarding the usefulness of this method of feedback. Similarly, in courses not requiring audio feedback for peer review, nearly all of the students who willingly participated in this method found it useful. What is noteworthy, then, is that students who provided and/or listened to audio feedback for peer review, whether required to do so or not, overwhelmingly responded favorably to the added component of audio feedback for peer review. Also, that a little more than half the participants (n=70) reported a preference for only audio feedback or a combination of audio and written feedback suggests pedagogical promise for implementing audio feedback at the peer level. These results imply that students are receptive to this method of feedback and that they recognize and appreciate the value and usefulness of providing and/or listening to audio feedback at the peer level.

Table 2

Preferred method	Sample student responses
Written	"I personally like written because it takes less time and I can go into greater depth."
	"I prefer written communication. If I were to have used SoundCloud I would have had to jot down notes as a script anyway so it was just easier to write the whole assignment."
	"I'd prefer to use only written communication, makes the criticizing more impersonal which is helpful with reviewing peers."
Audio	"Audio is preferred because some people's written feedback seemed overly critical until audio was added."
	"I really enjoyed giving and receiving audio feedback. It felt much more personal and more in depth. However, the audio feedback is harder to refer back to than written feedback."
	"I prefer to give and receive audio feedback. I'll typically find my little, smaller writing concerns with proofreading, I need to hear my 'big picture' problems for the most part; that was the best part of soundcloud."
Combination	"I would use either one, mainly a combo of the two so that if something was missed on sound-cloud [sic], then it can be recognized in the writing."
	"Both because people say more over soundloud [sic], but I would like to be able to look at their comments as well."
	"Both, SoundCloud is great, but can be difficult to go back and find what she was saying when you want it. It is easy to look through written feedback for something specific."

Students who prefer written feedback typically cited reasons related to efficiency and thoroughness; more specifically, students felt that written feedback is a more time efficient process, which correlates with the findings in Reynolds and Russell's (2008) research wherein students, despite the higher quality of their audio feedback for peer review, overwhelmingly preferred to exchange written feedback because they found the process of audio feedback too time consuming. Also, students who preferred audio feedback from their peers commonly described this feedback type as more "personal" and less harsh than written comments, which

aligns with Middleton and Nortcliffe's (2010) findings that indicate participants felt audio comments were more personal in nature. Interestingly, those who preferred a combination of audio and written peer-level feedback emphasize how they like to hear feedback from their peers but do not necessarily comment on their preference for giving this type of feedback; additionally, participants who preferred a combination of both types of feedback suggest that one type of feedback is enriched and supplemented by the other, thus resulting in a more effective peer review experience.

Perhaps, students who actually participated in the process of peer-level audio feedback, whether required to or not, became more comfortable with the technology and the method and were, therefore, more inclined to view audio feedback as more useful than those who did not use this method of feedback regularly. Based on their attitudinal survey results, Reynolds and Russell (2008) suggest that students' preference for written feedback versus audio feedback may reflect a reluctance to spend the time required for "processing audio comments" (p. 36). Their observation may help explain why the students in our study, when given the option, chose not to use audio feedback at the peer level. In other words, if students are not required to provide audio feedback for peer editing, they may not take the initiative to participate in this process on their own given the time required to explore the usefulness of such feedback, time that requires learning a new technology as well as time required for recording, listening, and processing. Additionally, it is possible that students who chose not to use audio feedback for peer review may have done so based either on their perceptions of instructor-recorded audio feedback or on previous experiences with audio feedback in other courses; furthermore, technological obstacles may have deterred students from opting to use SoundCloud to record and share audio feedback with their peers.

Limitations

To further support the efficacy of using SoundCloud for instructor- and peer-level feedback, we intend to conduct future research emphasizing qualitative analysis of transcribed recordings to assess the nature of the feedback instructors and students tend to give, for example, the degree to which feedback highlights higher order versus lower order concerns. Actual sound files should also be analyzed to determine what sound components lend to the more "personal" aspects of voice and tone in audio feedback. Additionally, cross-examining audio feedback at the instructor and peer level with students' drafts and final papers would facilitate a better understanding of the extent to which students actually implement audio feedback, thus assisting in determining the effectiveness of instructor and peer-to-peer audio feedback. Also, this study does not explore the depth of the social affordances of web-based, audio-recording technologies like SoundCloud; therefore, future studies should emphasize ways of utilizing the social features of such technologies designed specifically to prompt dialogue and collaboration. Finally, we acknowledge there are limitations to self-reported student data, primarily in regard to making pedagogical changes based on student perceptions; as such, we view our study as a step toward studying the effects of audio-feedback on student learning and engagement in writing classrooms.

Conclusion

In general, the results of this study <u>support</u> the literature on instructor-to-student feedback. Students' responses were positive, as they felt audio feedback provided clarity, was more personal, and helped them feel more connected to their instructors. The students who participated in this study reported a more positive experience using audio feedback for peer review than did the students who reported a preference for written peer-level feedback in the study that Reynolds and Russell (2008) conducted. The majority of our students that were required to use audio feedback for peer review found it to be very useful, especially in conjunction with written feedback. This suggests that feedback may be too complex for a single approach, and there are a number of technologies available for exploring this complexity. SoundCloud is one technology that can easily be used as a means of supplementing written feedback in positive ways that allow students to engage and process feedback through multiple modalities. Importantly, students found the technology very easy to use. Overall, use of SoundCloud supported course communication outcomes by providing an efficient and effective way of giving feedback.

Appendix

SoundCloud Instructions:

- Go to SoundCloud.com, click on "sign up" in the upper-left corner, and create a **free** account.
- Take the SoundCloud tour.
- If you have a smartphone, you may want to download the SoundCloud app to your phone.
- If you are using the desktop application, click on "Upload and Share":

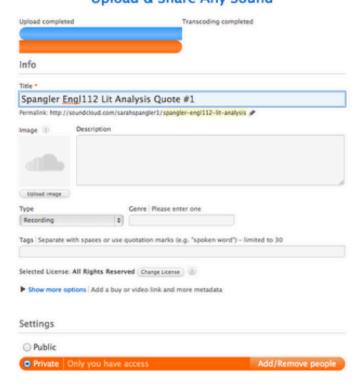


- Next, click on the orange record button and record your comment.
- When you are done recording, select "Upload your recording":



• After your recording has uploaded, title it and select the private option, and then save.

Upload & Share Any Sound



• Finally, copy the link for your audio recording and paste it into the discussion.



Mobile App

- Label your track accordingly.
- Select "private" before uploading your file.
- Access your desktop account.
- Click "You" to view your recent uploads.
- Select the track you wish to share.
- Copy and paste the link into your Google doc.

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